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EXAMINER	
LEE, RICHARD J	

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/900,168	KAMIYA, AKIRA	
	Examiner	Art Unit	
	Richard Lee	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,7 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-5, 7, 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The request filed on February 21, 2006 for a Request for Continued Examination (RCE) is acceptable and a RCE has been established. An action on the RCE follows.

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

At claim 7, lines 3, "said distributing of encoded data" shows no clear antecedent basis.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 4, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami of record (6,332,058) in view of Siong et al of record (6,028,632) and Haskell et al of record (5,159,447).

Kawakami discloses an information reproduction apparatus as shown in Figures 1 and 2, and the substantially the same multiple decoding method for simultaneously decoding two or more encoded data from a single composed of a plurality of encoded data (i.e. as provided by 12 of Figure 1, and see Figure 2, column 5, lines 55-65), and multiple decoding apparatus for receiving a signal composed of a plurality of encoded data and for simultaneously decoding two or more of the encoded data (i.e., as provided by 12 of Figure 1 and see Figure 2, column 5, lines 45-65) as claimed in claims 1 and 5, comprising substantially the same selecting a plurality of decoders (i.e., 22 of Figure 2) for performing decoding and a plurality of separate buffers (i.e., 34 of Figure 2) corresponding to the plurality of decoders, respectively, according to the usage

status of the plurality of decoders (i.e., gate controllers 32 control writing of information to the respective decoder buffers 34 based on the usage of the decoders, and gate controllers 32 are being supplied flags EF for timing adjustments of the flow of data to the decoder, and the decoder will decoded the respective data when ready, see column 5, lines 31-65, column 7, lines 7-47); extracting at least audio data and video data to be decoded and reproduced from the signal (i.e., as provided by 18 of Figures 1 and 2, and see column 4, lines 47-60); storing at least the extracted audio data and video data in a buffer (i.e., 30 of Figure 2); distributing at least the audio data and the video data stored in the buffer (i.e., as provided by 40 of Figure 2 and see column 5, lines 46-54, column 7, lines 7-18) for each data type (i.e., the MPEG stream of data as shown in Kawakami is based according to a specific type of video which includes inherent and specific header data, see column 5, lines 46-54, column 7, lines 7-18) and respectively storing at least the audio data and the video data in the plurality of separate buffers according to each data type (i.e., 34 of Figure 2); controlling output of at least the audio data and the video data stored in the separate buffers such that at least the audio data and the video data stored in the separate buffers are associated with each other (i.e., as provided by 32 of Figure 2 and see column 5, lines 31-45); decoding, responsive to the controlling, at least the audio and the video data stored in the separate buffers and outputting the two or more decoded data (i.e., as provided by 22 of Figure 2, and see column 5, lines 31-45); reproduction controller (i.e., 24, 36 of Figure 2) for outputting control information related to decoding and reproduction of the data; a data extractor (i.e., MPEG core server 18 of Figures 1 and 2) for receiving the signal and extracting at least audio data and video data which are designated by the control information; a buffer (i.e., 20, 30 of Figure 2) for storing at least the audio data and the video data extracted by the data extractor; a

buffer manager (i.e., within core server 18 of Figures 1 and 2, and see column 5, lines 1-30) for controlling the buffer in accordance with the control information for the buffer; a data flow controller (i.e., 40 of Figure 2 and see column 5, lines 46-54, column 7, lines 7-18) for distributing at least the audio data and the video data stored in the buffer for each data type and transferring at least the audio data and the video data in accordance with provided transfer conditions; a plurality of separate buffers (i.e., 34 of Figure 2) for respectively storing at least the audio data and the video data encoded data distributed and transferred by the data flow controller according to each data type; a plurality of decoders (i.e., 22 of Figures 1 and 2) respectively corresponding to the plurality of separate buffers for decoding at least the audio data and the video data stored in the plurality of separate buffers and outputting two or more decoded data; and a decoding controller for selecting a separate buffer and a decoder (i.e., CPU group 36 outputs control signal 38 in response to a request from external controller 24, thereby selecting the desired information for decoding to the respective buffer and decoder, see column 5, lines 46-54, column 7, lines 7-38) which are used for the decoding, according to the usage status of the decoder from among the plurality of separate buffers and the plurality of decoders in accordance with the control information (i.e., gate controllers 32 control writing of information to the respective decoder buffers 34 based on the usage of the decoders, and gate controllers 32 are being supplied flags EF for timing adjustments of the flow of data to the decoder, and the decoder will decoded the respective data when ready, see column 5, lines 31-65, column 7, lines 7-47), and outputting information related to the separate buffer selected by the decoding controller, the transfer conditions based on the separate buffer selected by the decoding controller, and an instruction to start decoding, respectively, to the separate buffer manager, the

data flow controller, and the decoder selected by the decoding controller (i.e., controller 24 and CPU group 36 controls all the hardware structures, see columns 5-7).

Kawakami does not particularly disclose, though, the followings:

(a) a separate buffer manager for controlling output of at least the audio data and the video data respectively stored in the plurality of separate buffers so as to be associated with each other in accordance with information for specifying the plurality of separate buffers as claimed in claim 1.

(b) the buffer manager outputs, when the buffer becomes full of at least the audio data and the video data, an overflow notification to the reproduction controller; the reproduction controller outputs, upon receipt of the overflow notification, an instruction to stop data extraction to the data extractor, and outputs an initialization instruction to the decoding controller; the decoding controller outputs, upon receipt of the initialization instruction from the reproduction controller, an instruction to initialize all of the plurality of separate buffers to the separate buffer manager, outputs an instruction to initialize the buffer to the buffer manager, and respectively outputs instructions to stop decoding to all of the plurality of decoders; the buffer manager initializes the buffer in accordance with the instruction to initialize the buffer from the decoding controller; the separate buffer manager initializes all of the plurality of separate buffers in accordance with the instruction to initialize all of the plurality of separate buffers from the decoding controller; and wherein the multiple decoding apparatus resumes all processing which was stopped when the buffer became full after the buffer and the plurality of separate buffers are initialized as claimed in claim 1;

(c) the separate buffer manger outputs, when a specific separate buffer becomes full of data, an overflow notification that the specific separate buffer overflows to the decoding controller, the decoding controller outputs, upon receipt of the overflow notification that the separate buffer overflows, an instruction to stop data transfer to the specific separate buffer to the data flow controller, an instruction to discard encoded data directed toward the specific separate buffer to the data flow controller, outputs an instruction to stop decoding to a decoder corresponding to the specific separate buffer, and outputs an instruction to initialize the specific separate buffer to the separate buffer manager, the separate buffer manager initializes the specific separate buffer in accordance with the instruction to initialize the specific separate buffer from the decoding controller, and the multiple decoding apparatus resumes all processing which was stopped as a result of the specific separate buffer becoming full after the specific separate buffer is initialized, and the discard of the encoded data is released after the specific separate buffer is initialized as claimed in claims 3 and 4;

(d) when the buffer becomes full of at least the audio data and the video data, stopping the extracting and the decoding, initializing the buffer and the plurality of separate buffers, and resuming all processing which is stopped as a result of the buffer becoming full after the initializing of the buffer and the plurality of separate buffers; when a specific separate buffer becomes full of data, discarding encoded data directed toward the specific separate buffer, stopping the distributing of encoded data into the specific separate buffer and the decoding of the encoded data stored in the specific separate buffer, initializing the specific separate buffer, and resuming all processing which was stopped when the specific separate buffer became full after

the initializing of the specific separate buffer, and releasing the discard of the encoded data as claimed in claims 5, 7, and 8.

Regarding (a), it is noted that Kawakami does teach the particular use of a plurality of buffer managers (i.e., 32 of Figure 2) for controlling the outputs of each of the respective plurality of separate buffers 34, but and not particularly a separate buffer manager for controlling the output of at least the audio data and the video data respectively stored in the plurality of separate buffers as claimed. However, Siong et al discloses a multiple buffer and video decoder management system as shown in Figure 1, and teaches the general concept of the use of a separate buffer manager (i.e., 6 of Figure 1 and see column 3, line 56 to column 4, line 27) for controlling outputs of the plurality of separate buffers (i.e., 7-9 of Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art, having the Kawakami and Siong et al references in front of him/her and the general knowledge of buffer management systems, would have had no difficulty in providing the separate buffer manager of Siong et al in place of the plurality of separate buffer managers 32 of Kawakami for the same well known single unit integrated processing and so that less hardware would be required for managing the buffers purposes as claimed.

Regarding (b) to (d), Haskell et al discloses a buffer control for variable bit rate channel as shown in Figures 1-4, and teaches the conventional notification of overflow situations associated with encoder and decoder buffers (see column 17, line 66 to column 18, line 13), and the particular termination of packets of data within the decoder as one way of preventing overflow in the buffers, thereby stopping decoding to the decoder, data extraction, data transfer to the specific buffer, and discarding data directed toward the specific buffer (see column 16,

lines 27-39). It is noted that Haskell et al is however silent as to the initialization of the respective buffer components in response to the overflow notification and the subsequent resuming of the processing which was stopped after buffer initialization and the discard of the data is released after the buffer is initialized as claimed. But, it is considered obvious even without specific disclosure that once the packets are terminated within Haskell due to buffer overflow, the buffers of Haskell must be initialized since the existing data within the buffers are of no use and so that the buffers could be properly re-set. Further, after such buffer initialization and re-setting within Haskell, all processing will therefore be resumed, and the discarded data is released (i.e., the existing data in the buffer is of no use and therefore is released) after buffer initialization. Therefore, it would have been obvious to one of ordinary skill in the art, having the Kawakami, Siong et al, and Haskell et al references in front of him/her and the general knowledge of video encoder and decoder buffer fullness, would have had no difficulty in providing the overflow notification, termination of packets of data within the decoder as one way of preventing overflow in the buffers, thereby stopping decoding to the decoder, data extraction, data transfer to the specific buffer, and discarding data directed toward the specific buffer as taught by Haskell as well as the obvious initialization of buffers upon receipt of an overflow notification and the subsequent resuming of the processing which was stopped after buffer initialization and the discard of the data is released after the buffer is initialized within Haskell for the multiple decoder of Kawakami so that the buffer manager, reproduction controller, decoding controller, and separate buffer manager of Kawakami may proper respond to the overflow notification for the same well known video decoder buffer overflow protection purposes as claimed.

5. Regarding the applicant's arguments at pages 7-8 of the amendment filed February 21, 2006 concerning in general that "... From this recitation of claim 1, it is apparent that the data flow controller distributes at least the audio data and the video data based on the type of data. It is submitted that Kawakami fails to disclose or suggest such a feature ... Kawakami distributes the data to the HDDs 20 and the DMA buffers 30 based solely on a number of bytes defined for the cells CE and the clusters CT and not on the type of the data ...", the Examiner respectfully disagrees. It is submitted again that the MPEG stream of data as shown in Kawakami is based according to a specific type of audio and video, which includes inherent and specific header data (see column 5, lines 46-54, column 6, lines 42-59, column 7, lines 7-18 of Kawakami). Though Kawakami may distribute the data to the HDDs 20 and the DMA buffers 30 according to a number of bytes defined for the cells CE and the clusters CT, the critical issue at hand is that the audio AS and video VS provided by the information materials 14 in the MPEG stream of Kawakami (see column 5, lines 55-65 of Kawakami) nevertheless are equivalent to the "data type" as claimed. The controller 40 of Kawakami corresponds to the data flow controller (see column 5, lines 46-54, column 7, lines 7-18 of Kawakami) for distributing at least the audio data and the video data stored in the buffer for each data type and transferring at least the audio data and the video data in accordance with provided transfer conditions, as claimed. It is to be further noted that by distributing the information materials 14 (i.e. video and audio signals, see column 5, line 55 to column 6, line 8 of Kawamaki) in the form of specific number of bytes defining cells CE and clusters CT within Kawakami, such breakdown of the video and audio data may also read on the particular features of "distributing at least the audio and the video data stored in said buffer for each data type", as claimed. In other words, as with MPEG header data, the

specific byte configuration of the audio and video data for storage within Kawakami may also be considered a "data type".

Regarding the applicant's arguments at pages 8-10 of the amendment filed February 21, 2006 concerning in general that "... Kawakami does not disclose or suggest that the controller 40 distributes the data from the DMA buffers 30 to a number of decoders based on data type. This can be clearly seen from Figure 2 which shows each of the decoders 22 outputting both the video signal VS and the audio signal AS ... there is no indication of distribution to the decoders 22 based on the type of the data ... it is clear that there is no distribution performed by the controller 40, or any other portion of the MPEG server 16 for that matter, that are based on the type of the data. Therefore, that the MPEG stream constitutes a "data type" does not mean that the MPEG server performs distribution on data type. As a result, it is believed apparent that Kawakami fails to disclose or suggest the data flow controller as recited in claim 1 ...", the Examiner respectfully disagrees. Since the information materials 14 of Kawakami includes video and audio signals/data are distributed for each data type as explained in the above paragraph, and such data is distributed to the decoders 22 (see column 5, lines 1-65 of Kawakami), it thereby follows that the video and audio data are distributed to the decoders 22 based on the type of the data. In addition, the applicant's argument that "that the MPEG stream constitutes a "data type" does not mean that the MPEG server performs distribution on data type" seems somewhat contradictory. If the MPEG stream constitutes a "data type" as contended by the applicant, then how can it be that the MPEG server of Kawakami, which distributes MPEG video and audio data, not perform the distribution on data type?

Regarding the applicant's arguments at page 10 of the amendment filed February 21, 2006 concerning in general that claim 5 reciting, in part, distributing at least audio data and video data stored in a buffer for each data type and respectively storing at least audio data and the video in the plurality of separate buffers according to each data type is not disclosed or suggested by the references, the Examiner respectfully disagrees for the reasons above.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (571) 272-7333. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

5/12/06